MUSTANG MAKEOVER PART 2

STUNNING SUCCESS:

500 HP

4.3 SEC
0 TO 60 mph

12.9 SEC
@112.1 MPH
1/4 MILE

93 FT
60 TO 0 mph

1.3 G
SKIDPAD

PROJECT #7

EXTERIOR MODS

Install a carbon fiber hood, deck lid and roof along with lower body modifications in order to improve aerodynamics, reduce weight and add some serious style.

PROJECT #8

INTERIOR MODS

Restyle the interior with custom pedals, gauges, and ***Dupli-Color*** special effects spray paints on the trim.

PROJECT #9

FINISHING TOUCHES

Design and execute a unique exterior paint treatment to highlight our exterior modifications. Polish and protect with ***Meguiar's*** NXT Generation Tech Wax 2.0.

PROJECT #10

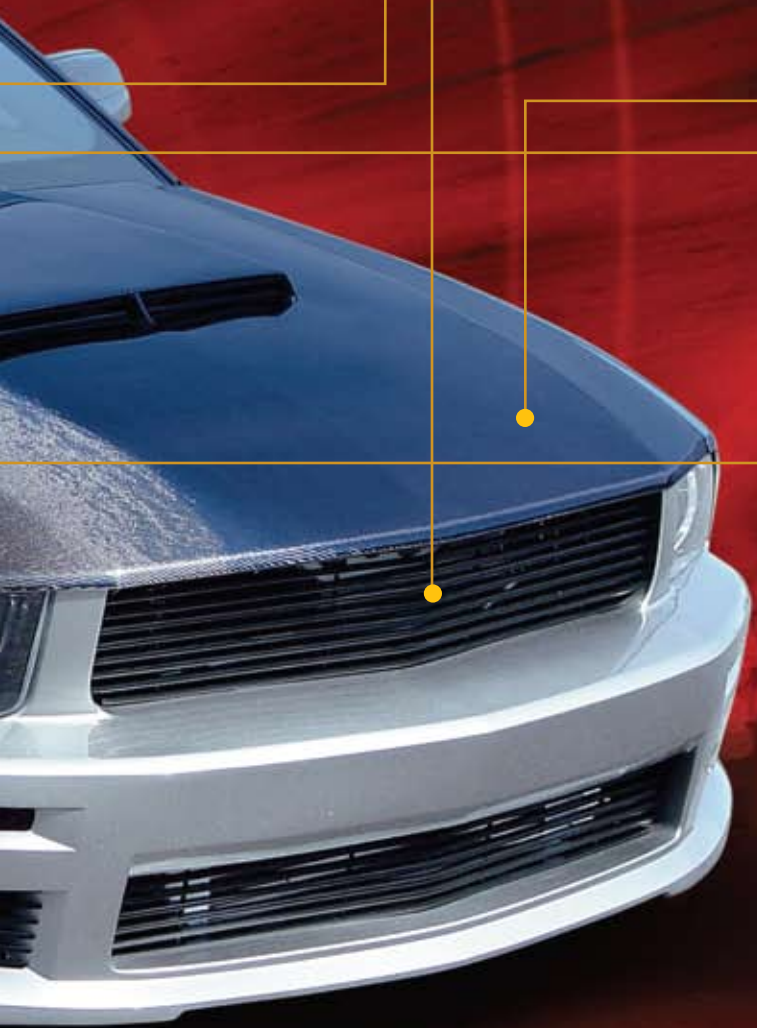
UNDER THE HOOD

Replace the stock battery with a high-tech ***Optima*** Red Top to ensure maximum battery life and maximum starting power for our V8, now equipped with a Paxton Novi 2200 High-Output Supercharger System.

PROJECT #11

GPS / AUDIO & VIDEO

Install a ***Magellan*** Maestro 4250 portable GPS Auto Navigation unit and a state-of-the-art Alpine/JL Audio system to upgrade our Mustang's stock system.



In the May issue, we introduced our latest project car, a 2008 Mustang GT chosen in a Popular Mechanics (PM) reader's poll as the car you'd most like to see us improve. Like every Mustang GT, ours came with a 4.6-liter V8 rated at 300 hp, a 5-speed manual gearbox, four-wheel disc brakes, traction control and air-conditioning.

We added some optional Ford accessories, gaining larger alloy wheels with 235/50ZR18 tires, ABS brakes, a 500-watt audio system, six-disc CD changer, Sirius satellite radio and leather-trimmed seats. At just $30,165, this Mustang GT is a bargain.

We drove gently for 1,000 miles, before heading to Virginia International Raceway (VIR) to see what a stock Mustang GT can do. That turned out to be 0 to 60 mph in 5.60 seconds, the quarter-mile in 14.4 seconds @ 100.5 mph, 60 to 0 mph braking in 130 feet, 63 mph through a 700-foot slalom and 0.82 g around a 200-foot skid pad. On VIR's Patriot Course, the Mustang ran its fastest lap at 58.5 seconds.

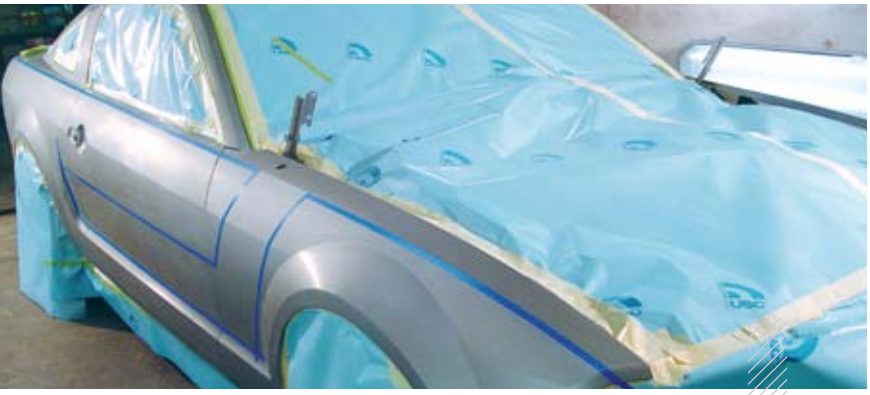
Back at the PM shop, we replaced the stock Ford clutch with a CenterForce racing clutch and steel flywheel. *Haynes Repair Manual: Ford Mustang* came in handy for checking our work, and of course we wore our tough Wolverine apparel while working in the shop.

While everything was apart, we installed JBA "shorty" stainless steel headers and a JBA "cat back" dual exhaust. To protect the engine, we installed Wix oil, fuel and air filters, plus Royal Purple engine oil and gear oil. A new Optima Red Top battery replaced the stock battery.

We installed Eibach's Pro-System-Plus suspension. This lowers the Mustang front and rear with new struts, springs, shock absorbers and anti-sway bars. We also installed camber/caster plates, a panhard rod and rear suspension arms.

Stainless Steel Brake Corporation Force 10 aluminum calipers with 13-inch Big Bite cross-drilled rotors replaced the stock brakes, front and rear.

A new set of tires and wheels completed our upgrades. We chose BFGoodrich g-Force T/A® KDW tires and ICCE Liquid (black/chrome) wheels from Big O Tires. For the front, 255/35ZR19 tires on 19x8.5-inch wheels; for the rear, 285/35ZR19s on 19x9.5-inch wheels.



We already had our baseline performance figures from testing the Mustang in stock form. Now we returned to the track to evaluate the performance improvement of the BFGoodrich tires, the Eibach suspension, the SSBC brakes and the JBA headers/exhaust.

Sometimes, everything just clicks. The Eibach suspension measurably improved cornering and handling, while it also contributed to quicker acceleration times. The SSBC brakes dramatically shortened stopping distances to some of the best braking figures we've ever seen. Our Mustang stopped 37 feet shorter than with the stock brakes, which is roughly two and a half car lengths.

The JBA headers and exhaust were worth a 3 mph improvement in the quarter-mile. The new BFG tires, with a rear tread nearly a foot wide, improved performance in every test thanks to their stickier compound, aggressive flame tread design and wider footprint. The Eibach suspension and BFGoodrich g-Force T/A KDW tires combined to let our Mustang GT generate 1.3 g on the VIR skid pad, a 58 percent improvement.

Back in the shop, we installed a Paxton Novi 2200 High-Output Supercharger with air-to-air intercooler. This is a bolt-on system that fits neatly under a Mustang hood. The final steps are fitting larger fuel-injectors and reprogramming the stock ECU to flow a lot more fuel into the engine for superior performance.

Before we went testing again, we installed a Seibon Carbon hood and deck lid and the new Stillen nose to protect the newly installed intercooler. We wanted to get our final track testing out of the way before painting the Mustang, to avoid chipping or scuffing the new paint. It's the same reason you see NASCAR racers doing preseason testing at Daytona in January with mismatched body panels and no decals.

On VIR's challenging Patriot Course, we turned a fastest lap of 55.5 seconds, a full 3 seconds faster than the Mustang in stock form. Then we drove to Virginia Motorsports Park, an NHRA drag strip in Dinwiddie, Virginia.

Including our driver and a full tank of high-octane gas, our Mustang weighs just about 3,900 lbs. With our street BFGoodrich g-Force T/A KDW tires inflated to 28 psi, on a spring day when the temperature never got above 60 degrees, we ran 0 to 60 mph in 4.3 seconds, an improvement of 1.3 seconds. Next, we ran the quarter-mile in 12.9 seconds @ 112.1 mph, a 1.5 second / 11.6 mph improvement over stock.

Based on our real world 112.1 mph quarter-mile speed and 3,900 lb. test weight, using formulas developed by the SAE, we calculate our Paxton supercharged Mustang V8 is producing a nice round 500 hp, SAE net.

Paxton claims 470 hp for this supercharger set-up on a stock Mustang V8. That means our JBA headers and exhaust system are worth about 30 hp, almost exactly what JBA claims. Needless to say, we're thrilled by the performance of our 2008 You Drive Mustang project car.

PROJECT #7

EXTERIOR MODS

To make our Mustang look as sharp as it runs, we added a variety of aftermarket body modifications. The most important thing to take into consideration when doing something like this is that any changes you make must blend with the styling of the original vehicle.

Our silver Mustang had a charcoal interior, so we decided to use black and red as highlight colors to emphasize its low-slung profile, mixed with carbon fiber areas for a modern touch.

We installed a carbon fiber hood and deck lid from Seibon Carbon. These beautifully made pieces bolt right onto the stock hardware and show the distinctive carbon fiber weave through clear resin.

To match the hood and deck lid, we purchased carbon fiber cloth to match the Seibon Carbon pieces. We then sanded and primed the Mustang top, filled the roof seams and then applied the carbon fiber. Our Mustang now looks as if the entire top of the car is made from carbon fiber. After scuff-sanding to promote adhesion, we clear-coated all the carbon fiber pieces to a high gloss.

A whole lower body kit from Stillen dramatically changed the look of our Mustang. Classic Design Concepts supplied a beautiful custom grille. We had a master fabricator make matching grilles for the hood scoop and oversize intercooler air intake, as well as the flanking brake cooling air intakes.

The lowered stance, low-profile tires on 19-inch wheels, massive intercooler intake and oversize exhaust tips peaking out from under the lower body cladding give further visual proof that this is no ordinary Mustang GT.

PROJECT #8

INTERIOR MODS

At first, we planned a number of expensive modifications to our Mustang's interior. But we soon realized that the stock leather-trimmed, heated, power bucket seats were comfortable and supportive. We've also kept the original steering wheel and other controls, for the simple reason that they function well and look sharp. Why replace them?

We did obtain a set of CDC polished aluminum GT500 pedals and a dash top panel that houses three gauges. We then covered the gauge panel in carbon fiber to match the hood before we installed Sunpro gauges to monitor the fuel pressure, intake manifold pressure and oil pressure of our Paxton supercharger.

Dupli-Color wisely sells a variety of special-purpose paints in matching colors. We chose Vinyl & Fabric Coating in a bright red that perfectly matches the Paint Shop Performance Red we used for an accent color on the exterior. We also used Dupli-Color Adhesion Promoter, a quick-drying clear primer that's necessary when applying color over disparate materials.

A popular trend is the use of matte finish paints, which are commonly referred to as "suede." Dupli-Color Vinyl & Fabric Coating creates a perfect suede finish. We used it as an accent to brighten up the interior's charcoal color scheme, making the interior seem very different from stock, yet it only took a short amount of time and a few cans of paint.

Our final step was to use micro fiber towels and Meguiar's Quik Interior Detailer to clean every interior surface and leave just a hint of gloss finish.

MEGUIAR'S is one of the largest suppliers of specialized automotive cleaning and finishing products in the world. Once our You Drive Mustang had been painted, we waxed the finish with Meguiar's NXT Generation Tech Wax 2.0. This high-tech wax contains hydrophobic polymers that protect against oxidation, corrosion and ultraviolet radiation.

To keep the finish perfect, particularly at car shows, we'll use Meguiar's Ultimate Quik Detailer, which also contains hydrophobic polymers. On the Mustang interior, we'll use Meguiar's Quik Interior Detailer to clean and protect every part, from upholstery to our new audio equipment.

Come clean at **meguiars.com**.

PROJECT #9

FINISHING TOUCHES

After scuff-sanding the surfaces, we dusted the edges of the carbon fiber parts with Dupli-Color Paint Shop lacquer to blend it into the Jet Black accent color, set off with a "Boss Mustang" style stripe on the body sides that fades from Jet Black to Performance Red.

Before it was bolted on, the Stillen lower body kit was painted to match the stock Mustang Vapor Metallic paint. Using Dupli-Color VHT Nite Shades, we blacked out the stock Mustang running lights and taillights, blending them into the custom look that makes our project Mustang so distinctive.

The final touch was coating the GT emblems with Dupli-Color Metalcast and using Dupli-Color Hot Tires to highlight the BFGoodrich name on the g-Force T/A KDW tires. Our finished Mustang masterfully blends modern carbon fiber and performance accessories with a paint treatment reminiscent of the iconic 1970 Boss Mustang.

Every year, Meguiar's seems to introduce even more high-tech, easier to use waxes and polishes. We can attest that the new NXT Generation Tech Wax 2.0 is easy to apply and buff, produces a brilliant shine and lasts longer than traditional waxes.

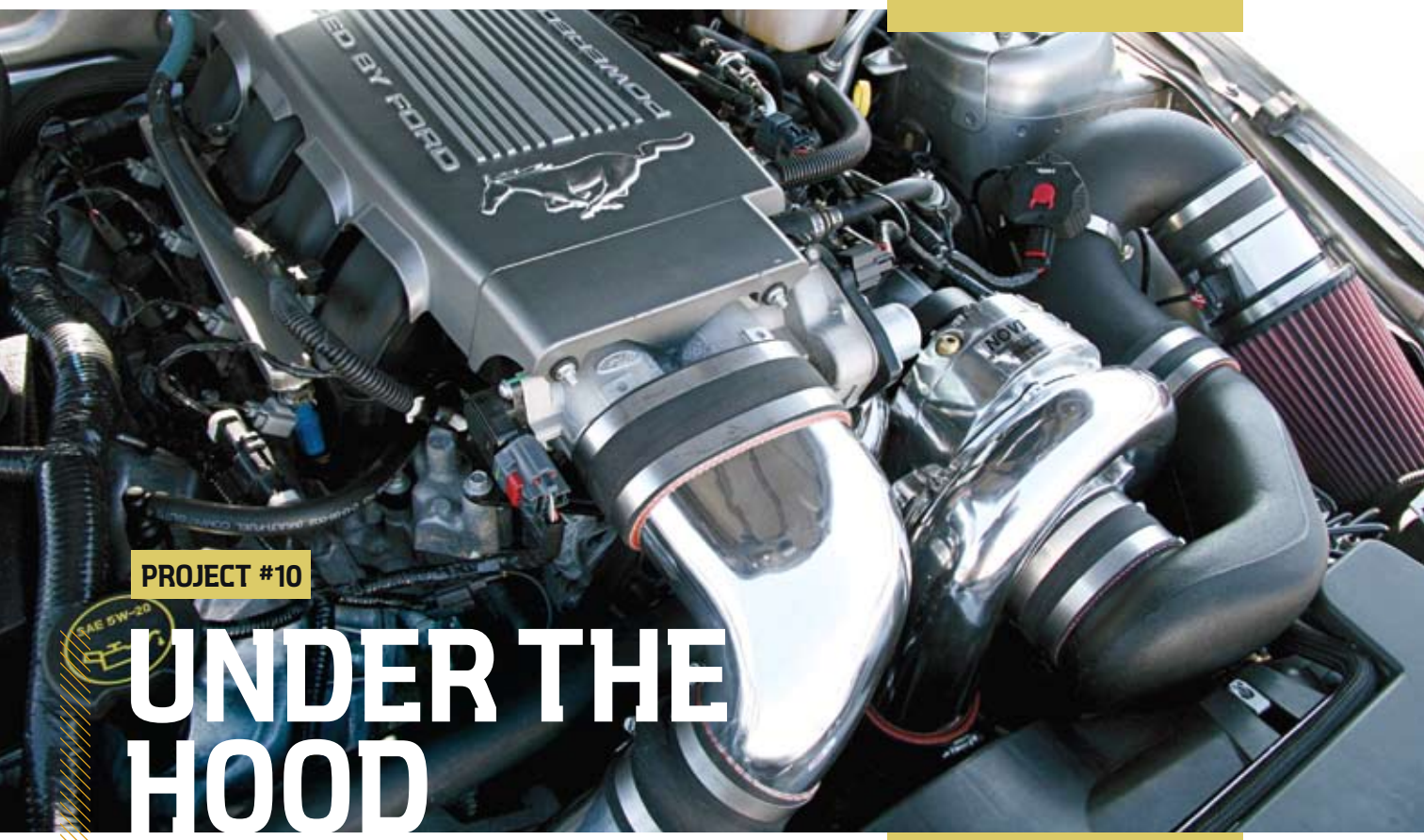
Meguiar's Ultimate Quik Detailer will make our Mustang stand out on the circuit when it's showcased at SEMA and various events across the country.

DUPLI-COLOR makes a wide array of automotive paints, primers and coatings. There's everything from adhesion promoter to wheel coating, including spray cans of Mirage color-shifting paint and Metalcast anodized colors.

To paint our Mustang's custom bodywork, we used a new Dupli-Color product, Paint Shop. Paint Shop is a three-step lacquer system—primer, color and clear coat—intended for DIY painters.

It's available in eight colors, including Jet Black and Performance Red that we used. Paint Shop is ready-to-spray, requires no mixing or reducing and has no recoat window.

Brighten up at **dupli-color.com.**



PROJECT #10

UNDER THE HOOD

Ford's modular, single overhead-cam, three-valve-per-cylinder, 4.6-liter V8 has proven itself through years of faithful service. It has reliably powered millions of Ford, Lincoln and Mercury vehicles. Even in stock form, its 300 hp is enough to give the Mustang GT plenty of power. Any car that can do 0 to 60 mph in just over 5 seconds and 100 mph in the quarter-mile is plenty quick.

We raised our Mustang's performance to another whole level by bolting on a Paxton Novi 2200 High-Output Supercharger with air-to-air intercooler. Try 0 to 60 mph in 4.3 seconds and 112.1 in the quarter-mile. The belt-driven Paxton centrifugal blower is a true bolt-on, but fitting all the pieces around the already crowded Mustang engine compartment is challenging.

The supercharger also makes the big V8 more difficult to start, because there are a lot more moving parts that must be powered. Our easy solution was to bolt in an Optima Red Top 34/78 12-volt battery. The Red Top weighs just 39 lbs., features both GM and SAE electrical connectors, 800 cold cranking amps and 980 cranking amps. It spins our big V8 just like a top.

Originally developed for the U.S. military and now manufactured by global conglomerate Johnson Controls, the lead/acid **OPTIMA** battery features a unique spiral cell design. Among other things, every sealed Optima battery is spill-proof and can be mounted in any position.

There are three consumer Optima batteries. The Red Top, which we used in our Mustang project, delivers high cranking power. The dual-purpose Yellow Top combines high cranking power with deep cycle capabilities. The Blue Top is designed as a long-lasting, maintenance-free battery for marine applications.

Get cranking at **optimabatteries.com.**

PROJECT #11

GPS / AUDIO & VIDEO

The final addition to our Mustang GT is a navigation and audio & video system that rivals the supercharger for power. We started with a Maestro 4250, Magellan's top-of-the-line automotive navigation GPS.

The Maestro 4250 features a slim design that will fit almost anywhere on a car's dash. It features a 4.3-inch screen, Bluetooth cell phone hands-free calling and voice command/voice control. It can be upgraded using a computer and comes with AAA TourBook travel tips.

Upgrading our audio & video system started with an Alpine IVA-W205 In-Dash Multimedia Station. It features a 6.5-inch touch screen, XM or Sirius satellite radio, a DVD player, a radio tuner and a built-in four-channel, 50-watt-per-channel amplifier.

We added a JL Audio A6450 six-channel amplifier. It features a built-in crossover that is continuously variable from 50 to 200 Hz and a variety of configurations ranging up to 110 watts RMS times six channels.

To handle the output, we added a JL Audio 12W1v2 12-inch subwoofer rated up to 300 watts, a pair of TR570-CXi 6x8 inch coaxial speakers and a pair of VR600-CSi component systems with 6-inch woofers and separate silk soft dome tweeters controlled by a separate crossover network.

To continue our carbon fiber theme on the interior, we used a Q Logic carbon fiber enclosure for the 12-inch subwoofer. Along with the carbon fiber hood, top and deck lid, this carbon fiber speaker enclosure really completes our Mustang.

MAGELLAN is the leading manufacturer of personal GPS units. There are five different Magellan GPS model lines.

For outdoor adventures, the Triton series is a state-of-the-art, hand-held GPS with waterproof full-color display. The eXplorist family of hand-held units features expandable map capability, right or left-hand use and a joystick controller.

The Crossover GPS is a fully featured GPS that has all the features of a Magellan auto navigation unit combined with a pocket-size outdoors GPS.

The Magellan RoadMate is a compact auto navigation GPS with touch-screen menu and both voice and visual directions. The Maestro family is a top-line vehicle navigation system featuring voice and visual directions, plus integrated information from the AAA TourBook Guide.

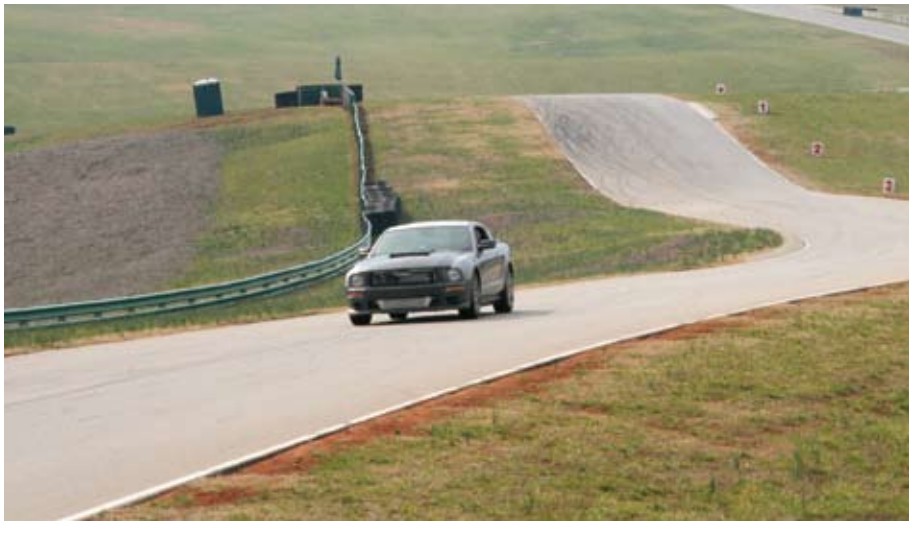
Find your way at **magellangps.com.**

Spending only a nominal amount of money and time, we've taken a stock Mustang GT and transformed it into a slick, high-tech, high-performance sports car capable of giving fits to Ferraris.

Our Mustang is reliable, easy to drive and only a tad noisier than before. The ride is still comfortable on the street, but the muted roar of the supercharger instantly lets you know this is anything but stock. Coupled with our custom mods, this 2008 Mustang GT is sensational.

Even with wide BFGoodrich g-Force T/A KDW tires, our 500 hp Mustang can burn rubber in all five gears. With a set of drag slicks on the rear wheels and some careful tuning, we're sure we could get this docile street machine through the quarter-mile in the 11-second bracket.

Add in the Magellan Maestro GPS, the Alpine/JL Audio upgrades, the subtle carbon fiber bodywork, the Optima Red Top battery, the gorgeous Dupli-Color paint job and the smooth Meguiar's finish, and our You Drive project car has transformed into the ultimate street legal Mustang GT.



PERFORMANCE TEST RESULTS

0-60 MPH

4.3 SEC

(1.3 SEC IMPROVEMENT)

STOCK: 5.60 sec

Eibach suspension and JBA headers/exhaust

STOCK TIRES: 5.3 sec
BFG TIRES: 5.1 sec

Eibach suspension, JBA headers/ exhaust and Paxton supercharger

STOCK TIRES: 4.7 sec
BFG TIRES: 4.3 sec

1/4 MILE

12.9 SEC @ 112.1 MPH

(1.5 SEC & 11.6 MPH IMPROVEMENT)

STOCK: 14.4 sec @ 100.5 mph

Eibach suspension and JBA headers/exhaust

STOCK TIRES: 14.1 sec @ 103.5 mph
BFG TIRES: 13.9 sec @ 103.7 mph

Eibach suspension, JBA headers/ exhaust and Paxton Supercharger

STOCK TIRES: 13.2 sec @ 111.2 mph
BFG TIRES: 12.9 sec @ 112.1 mph

60-0

93 FT

(37 FOOT IMPROVEMENT)

STOCK: 130 feet

Eibach suspension and SSBC brakes

STOCK TIRES: 112 feet
BFG TIRES: 93 feet

ROAD COURSE

55.5 SEC

(3 SEC IMPROVEMENT)

STOCK: 58.5 SEC

Eibach suspension, JBA headers/ exhaust and SSBC brakes

STOCK TIRES: 58.0 sec
BFG TIRES: 57.5 sec

Eibach suspension, JBA headers/ exhaust, SSBC brakes and Paxton supercharger

STOCK TIRES: 57.2 sec
BFG TIRES: 55.5 sec

SLALOM

67 MPH

(4 MPH IMPROVEMENT)

STOCK: 63 mph

Eibach suspension

STOCK TIRES: 65 mph
BFG TIRES: 67 mph

SKID PAD

1.3 G'S

(0.48 G'S IMPROVEMENT)

STOCK: .82 G

Eibach suspension

STOCK TIRES: .94 g
BFG TIRES: 1.3 g

Coming soon, you can see our 2008 You Drive project car at the following venues:

DATE	EVENT	CITY
June 6 - 8	Pocono 500	Long Pond, PA
June 29	Freewheelers Car Club	Augusta, NJ
July 28 - August 3	EAA AirVenture Oshkosh	Oshkosh, WI
September 20	Route 66 Rendezvous	San Bernardino, CA
November 4 - 7	SEMA Show	Las Vegas, NV

YOU DRIVE AUCTION

You can bid on the 2008 You Drive project car by visiting **popularmechanics.com/youdrive**

SPONSORS

SUPPLIERS

Alpine Electronics
IVA-W205 2 DIN DVD/CD/MP3/WMA Receiver/AV Head Unit

Big O Tires/ICCE Wheels
Liquid (black/chrome) 19x8.5 (fr) 19x9.5 (rr)

Classic Design Concepts
GT Replacement Grille, GT500 Pedals, Gauge Pod

JBA Performance Exhaust
Shorty Headers, Dual Rear Exit Exhaust

JL Audio
A6450 six channel amplifier, 12W1v2 12-inch subwoofer, TR570-CXi 6x8 coaxial speakers, VR600-CSi component speaker system

Paxton Automotive
NOVI 2200 High-Output Supercharger System with NOVI 1200 Air/Air Charger System

Q Logic
QL-C1MST112BCF subwoofer enclosure

Seibon Carbon
SC style carbon fiber hood, ST style carbon fiber trunk lid

Stainless Steel Brake Corp.
Force 10 Tri-Power (fr), Sport R1 (rr) with 13-in Big Bite cross-drilled rotors

Stillen
Street Scene Mustang GT Generation 1 Body Kit

VISIT WWW.POPULARMECHANICS.COM/YOUDRIVE